

## Influence of dental care on children's oral health and wellbeing

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### **Background**

Early childhood dental problems can have a significant impact not only on the oral health of young children, but also on their quality of life and the quality of life of their families. Added to this is the long-term risk of contracting permanent teeth. An **objective** overview of the current literature on dealing with early childhood caries and its effects on general oral and general health. **Findings** Recent studies show that the risk of tooth decay, gum disease, crooked teeth, and other common health problems, including overweight and obesity, may be increased in children with early childhood tooth decay. Suggested. Traditional restoration of damaged primary teeth has been shown to yield only moderate results, depending on the techniques and materials used and the child's ability to cooperate due to age and other factors. **Conclusion** Interesting recent approaches to seal enamel caries, only partially remove carious dentin, or completely seal carious dentin lesions deserve not only discussion but also long-term investigation. With increasing demand for funds, dentistry must consider how to provide the most appropriate care to help children reach adulthood with healthy permanent teeth. This now reaches less than half of the population.

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### **I. Introduction**

Children can suffer from many different dental diseases, but the most common is tooth decay. Dentists sometimes face a dilemma when treating children. This is often related to the child's age and developmental stage. For example, there are challenges associated with very young children who exhibit oral problems with little language and comprehension, or young adolescents who may be unmotivated to take preventative measures or unwilling to allow appropriate restorative treatment. Adult patients make their own decisions about home oral care or whether to seek treatment after their dentist has attempted to motivate, inform, and explain their need for dental care. The decision to refuse care is made for a number of well-documented reasons,

including fears and anxieties about care and costs. You may be affected by circumstances beyond your control. The purpose of this paper is to identify issues related to children's dental care, such as the effects of toothache and infections on children and their families. relationship between diet, dental caries and general health; outcomes and need for restorative care. And the possibility of caries seal. Discussing the long-term effects of early childhood dental caries on the risk of permanent dentition problems and arguing that engaging in good oral health during childhood is an important factor in improving oral health throughout life paying attention to.

Because young children do not always complain of discomfort, the presence of pain can be difficult to diagnose. Dentists never ask directly if a child is complaining of discomfort.<sup>6</sup> In addition, a child who refuses to eat some foods and who constantly snacks without eating a full meal may They can suffer from chronic toothache and hunger. The consequences of not caring for a young child with a toothache can be much more severe than for adults. These include sleep deprivation, unhealthy diet, and changes in normal daily activities. It can also affect the child's immediate environment, such as food refusal, parents being woken up in the middle of the night, and behavioral changes that interfere with school learning. Given that these problems have a significant impact on family life, and given that the prevalence of tooth decay is highest in the most stressed families, parents are often left If shown to drain the sinus from a periapical infection, the effort will not be evaluated. This increases the likelihood of identifying children with chronic problems and improving oral health in children with these problems.<sup>3,7-9</sup> Deciduous teeth Childhood caries (ECC) has been shown to be one of the most important predictors of caries risk. Permanently healthy teeth in adolescence and adulthood<sup>10-12</sup>. Oral health conditions such as periodontal disease, crooked teeth, and dental anxiety have also been shown to be worse in adolescents who develop ECC.<sup>12-14</sup> It can be argued that dental care is more important for children and adolescents than at any other time in life.

### **DIET AND DENTAL CARIES**

ECC can have a very severe effect on the oral health and wellbeing of young children.<sup>15,16</sup> For over 30 years the dental literature has recorded the effectiveness of various preventive programmes particularly those showing the effect of fluoride on the prevalence of dental caries in communities with optimal levels of fluoride in community water supplies.<sup>17,18</sup> Dental caries that remains even with fluoride use in water supplies or with toothpaste is often stated to be only in a small percentage of children. Despite this, the reality is that throughout the world around half the children starting school at five to six years of age have some experience of this disease, and there is good evidence from the most recent national oral health surveys that dental caries is still a significant health burden for children and adolescents. In 2009 49% of children in New Zealand aged 5-11 years had visible caries in their primary teeth and 22.5% already had caries in their permanent teeth.<sup>19</sup> In 2007 46% of six-year-old children attending the school dental service in Australia had dental caries with 10% of children having severe ECC with almost ten decayed, missing or filled primary teeth (dmft).<sup>20</sup> Most studies report that although the prevalence of dental caries in 12-year-olds has decreased greatly over the past 30 years the disease level is still significant. What is of far greater concern, and rarely mentioned in the literature, is the increase in caries that occurs through adolescence. In the 2007 Australian survey 39% of 12-year-olds and 60% of 15-year-olds had experience of dental caries.<sup>20</sup> In a UK survey of 12-year-old children attending state schools in England in 2008/2009 33.4% were reported to have visible dental caries in their permanent teeth.<sup>21</sup> In 2009 in New Zealand 45.3% of 11-17-year-olds had caries in their permanent teeth.<sup>19</sup> If the goal is for children to reach adulthood with dentitions that will be healthy for life it is no longer acceptable to plan oral healthcare and/or funding based on oral health data for 12-year-olds alone. There is evidence that more than half of the adolescent population reaches adulthood with the burden of recovery, and all reports indicate that the most severe tooth decay is associated with socioeconomic disadvantage and ethnicity. As healthcare funding becomes more competitive, dentistry must consider innovative (yet untested) approaches to reducing the risk of tooth decay in children and adolescents.

### **TO RESTORE OR NOT TO RESTORE DENTAL CARIES IN THE PRIMARY DENTITION?**

Perhaps the most challenging factors affecting the supply and quality of restorative care for children around the world are:

funding, facilities and equipment, practitioner expertise, and available time. In addition to these issues, dentists have a responsibility to look for alternatives when children and young people cannot cope with the care they need. Many people still have this perception:

- Taking too long to treat a child
- deciduous teeth do not need treatment
- Children do not have chronic dental infection problems
- I don't have enough money for this treat a child
- General anesthesia (GA) for dental care is too risky

- Recovery will not last long deciduous teeth
- Small children don't mind if their front teeth fall out

None of these arguments should be used as a justification for not providing care. Improving the oral health-related quality of life of children and their families through appropriate dental care can help treat children with cavities to stop disease, eliminate infections, and restore teeth and occlusion when needed. Strong evidence that it needs to be rehabilitated. If children should be funded for sedation and general anesthesia to avoid living with chronic pain, the argument is to treat other medical conditions such as ear and skin infections. Dental care is health care, and this care is in line with all other standard preventive and surgical procedures that children receive to support their normal development. should be considered as important as physical treatment.

#### **WHAT ARE THE OUTCOMES OF RESTORATIVE CARE IN THE PRIMARY DENTITION?**

Years of research have shown that the survival rates of primary tooth restorations/materials vary widely. It has been suggested that this may be due to a number of factors, including difficulty in achieving adequate isolation and coordination in very young children, small tooth size, and/or binding resin materials. The enamel structure of Regarding child compliance, it is clear that more acceptable long-term outcomes are possible when appropriate treatment is used, whether behavioral therapy, sedation or general anesthesia. It has been shown to significantly improve the quality of numerous studies have addressed the viability of restorations and restorative materials. Composite resins and polyacid-modified composite resins have shown approximately 80% retention over 2-4 years, and amalgam restorations have shown greater than 70% retention. However, resin modified glass ionomer and glass ionomer cement restorations have not met with the same success over similar time periods. The restoration that has shown the best results, at least for first molars, is a stainless steel crown (SSC). The lifespan of deciduous teeth is about 9 years.

Second molar. Future research on restorative materials and techniques should consider the special needs of deciduous teeth and how to prevent them from exfoliating when damaged by caries, trauma, or other causes. Given the importance of reducing caries-causing biofilms to reduce risk, restorative care plays a role alongside microbiological approaches: restorative and extractive therapy and preventive care.

#### **PRESERVING CARIOUS PRIMARY TEETH UNTIL THE TIME OF NATURAL EXFOLIATION**

There is good evidence that SSCs are an extremely successful and cost effective restoration for primary molars with more than one surface affected by dental caries. In the past practitioners have some- times been daunted by the preparation and placement of these crowns although those who have made the effort to master the procedure have found this technique to be effective with very low failure rates.<sup>35,43</sup> More recently an approach has been to place SSCs without caries removal and no tooth preparation other than after a few days of tooth separation (Hall technique - named after a practitioner in Scotland who initiated this procedure). The outcomes are good where the crowns can be placed.<sup>44</sup> However, it is important to consider both the benefits and the limitations of this procedure. Where only a few molars are involved and there is no space loss, SSCs placed with this technique may provide an effective sealed restoration. This is not a new concept as previous studies of carious lesions sealed with resins or after stepwise excavation or indirect pulp capping have clearly shown a decrease or halt in the progression of lesions when the carious tissue is well sealed.<sup>45-48</sup> A problem with the resin fissure sealing approach has been that these materials do not maintain a permanent seal and must be regularly maintained – a problem when patients are not regular attendees. At present, the duration of effective sealing of teeth restored with SSC placed with or without tooth preparation is unknown, but can be expected to be very successful. However, the Hall method for SSC placement offers a useful approach for some infants. Examples include children who have no options for sedation or general anesthesia, are uncooperative, and have only one or two decayed or underdeveloped molars. If there is enough space between the teeth, many children will bite into their crowns just fine. Not surprisingly, in older children who are less cooperative, the Hall procedure has been shown to have a much higher success rate than intracoronary glass-ionomer cement restorations.<sup>49</sup> There are limits. Teeth should be carefully selected and should not show any signs or symptoms of pulpal involvement. When a tooth has been hollowed out for an extended period of time, it often loses space that prevents it from fitting a preformed stainless steel crown without significant adjustments to avoid a noticeable overhang. , this procedure does not replace the conventional procedure for crown insertion, but is an additional procedure with appropriate case selection. Regardless of the technique or material used to restore a cavity tooth, the needs of the entire mouth should be considered. Successful restoration of posterior teeth while leaving anterior teeth with caries and other teeth with enamel caries may retain highly carious biofilms, jeopardizing newly erupting permanent teeth. Better coping skills to repair, reverse, or seal cavities in other teeth to reduce bacteria within biofilms and encourage the use of home preventive measures.

## RE THERE OTHER OPTIONS FOR SEALING CARIOUS LESIONS?

The Hall method for placing SSCs has reignited interest in its potential to stop caries by sealing carious lesions by various means. This is not a new concept. Davila et al.<sup>50</sup> showed in the 1970s that sealing interdental lesions with resin sealants significantly reduced lesion progression. Subsequently, Handelman et al.<sup>46</sup> found that if occlusal dentin lesions were effectively sealed with resin, occlusal dentin lesions could be stopped and the number of bacteria within the lesions decreased. Proven. Recently, studies investigating only partial removal of carious dentin from deciduous lesions by mechanical or chemo-mechanical means have shown good long-term results. It must be effectively sealed to support this technology. The concept of resin invasion of enamel lesions was explored by Robinson et al.<sup>52</sup> and recently reviewed by Paris et al.<sup>53</sup> and Meyer Lueckal and Paris<sup>54</sup>. hinder. There can be problems with this approach. While lesions remain sealed or infiltrated, no progression occurs, but the resin wears and degrades, requiring regular maintenance. Another problem can arise when a patient switches to a different doctor who has an x-ray and sees what appears to be an unrepaired carious lesion. There is a nature. Another approach to caries treatment that has been proposed and re-examined in the past is to use materials that stop caries without actually repairing the defect. , with or without diamine silver fluoride. Waiting lists can be consulted with a dentist or specialist who can perform restorative treatment. All of these approaches avoid the removal of healthy tooth tissue to control the caries process and provide an avenue for future treatments.

## II. Conclusion

There is growing evidence that deciduous teeth problems are indicators of and contribute to the risk of poor oral hygiene in adolescence and adulthood. In addition to finding effective preventive approaches, a concerted effort is required for all dentists to find improved approaches for restoring and preserving primary and young permanent teeth. Children express themselves Dental professionals must continue to work towards care that provides children with comfortable and functional primary teeth, healthy young permanent teeth and optimal oral health throughout adulthood. It is important that child-related oral health research and training for dentists and pediatric dentists is adequately funded. The future undoubtedly holds different models of care and different approaches to caries treatment, not just for children, but for a lifetime. The available information indicates that many children do not receive adequate or adequate dental care, and dental professionals are open to exploring new approaches that may include a combination of restorations, sealings and caries control. Avoiding this in children increases the risk of long-term problems in adulthood, affecting oral and general health.

## References

- [1]. Armfield J. The avoidance and delaying of dental visits in Australia. *Aust Dent J* 2012; **57**: 243–247.
- [2]. Hill K B, Chadwick B, Freeman R, O'Sullivan I, Murray J J. Adult Dental Health Survey 2009: relationships between dental attendance patterns, oral health behaviour and the current barriers to dental care. *Br Dent J* 2013; **214**: 25–32.
- [3]. Filstrup S L, Briskie D, da Foneseca M, Lawrence L, Wandera A, Inglehart M R. Early childhood caries and quality of life: child and parent perspectives. *Pediatr Dent* 2003; **25**: 431–440.
- [4]. Martins-Júnior P A, Vieira-Andrade R G, Corrêa-Faria P, Oliveira-Ferreira F, Marques L S, Ramos-Jorge M L. Impact of early childhood caries on the oral health-related quality of life of preschool children and their parents. *Caries Res* 2013; **47**: 211–218.
- [5]. Wong H M, McGrath C P, King N M, Lo E C. Oral health-related quality of life in Hong Kong pre-school children. *Caries Res* 2011; **45**: 370–376.
- [6]. Milsom K M, Tickle M, Blinkhorn A S. Dental pain and dental treatment of young children attending the general dental service. *Br Dent J* 2002; **192**: 280–284.
- [7]. Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. *Pediatr Dent* 1999; **21**: 325–326.
- [8]. Sheiham A. Dental caries affects body weight, growth and quality of life in pre-school children. *Br Dent J* 2006; **25**: 625–626.
- [9]. Alkarimi H A, Watt R G, Pikhart H, Jawadi A H, Sheiham A, Tsakos G. Impact of treating dental caries on schoolchildren's anthropometric dental, satisfaction and appetite outcomes: a randomized clinical trial. *BMC Public Health* 2012; **12**: 706–714.
- [10]. Thomson W M, Poulton R, Milne B J, Caspi A, Broughton J R, Ayers K M. Socioeconomic inequalities in oral health in childhood and adulthood in a birth cohort. *Community Dent Oral Epidemiol* 2004; **32**: 345–353.
- [11]. Alm A, Wendt L K, Koch G, Birkhed D. Prevalence of approximal caries in posterior teeth in 15-year-old
- [12]. Swedish teenagers in relation to their caries experience at 3 years of age. *Caries Res* 2007; **41**: 392–398.
- [13]. D'Mello G I. Long-term oral and general health outcomes in adolescents who had extensive decay in early childhood. DCLinDent thesis. Dunedin, New Zealand: University of Otago, 2012.
- [14]. Finucaine D. Rationale for restoration of carious primary teeth: a review. *Eur Arch Paediatr Dent* 2012; **13**: 281–292.
- [15]. Thomson W M, Broadbent J M, Locker D, Poulton R. Trajectories of dental anxiety in a birth cohort. *Community Dent Oral Epidemiol* 2009; **37**: 209–219.
- [17]. Acs G, Shulman R, Ng M W, Chussid S. The effect of dental rehabilitation on the body weight of children with early childhood caries. *Pediatr Dent* 1999; **21**: 109–113.
- [18]. Mouradian W E, Wehr E, James J D, Crall J. Disparities in children's oral health and access to dental care. *J Am Med Assoc* 2000; **284**: 625–631.
- [19]. McDonagh M S, Whiting P F, Wilson P M et al. Systematic review of water fluoridation. *BMJ* 2000; **321**: 855–859.
- [20]. Australian Government National Health and Medical Research Council. A systematic review of the efficacy and safety of fluoridation. Australian Government, 2007.
- [21]. New Zealand Ministry of Health. Our oral health: key findings of the 2009 New Zealand oral health survey. Wellington: Ministry of Health, 2010.



- [56]. Robinson C, Brookes S J, Kirkham J, Wood S R, Shore R C. in vitro studies of the penetration of adhesive resins into artificial caries-like lesions. *Caries Res* 2001; **35**: 136–141.
- [57]. Paris S, Meyer-Lueckel H, Kielbassa A M. Resin infiltration of natural caries lesions. *J Dent Res* 2007; **86**: 662–666.
- [58]. Meyer-Lueckel, Paris S H. Improved resin infiltration of natural caries lesions. *J Dent Res* 2008; **87**: 1112–1116.
- [59]. Zhi Q H, Lo E C, Lin H C. Randomized clinical trial on effectiveness of silver diamine fluoride and glass ionomer in arresting dentine caries in preschool children. *J Dent* 2012; **40**: 962–967.
- [60]. Knight G M, McIntyre J M, Craig G G, Mulyani, Zilm P S, Gully N J. Inability to form a biofilm of *Streptococcus mutans* on silver fluoride-andpotassium iodide-treated demineralized dentin. *Quintessence Int* 2009; **40**: 155–161.

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